

PATENT

Attorney Docket No. D0932-405

Listing of Claims:

1. (Currently amended) A laminate flooring sub-layer material comprising:
inorganic fibers; and
plastic-containing bonding fibers;
said inorganic fibers and the plastic-containing bonding fibers being uniformly blended and bonded together by a portion of the plastic of said plastic-containing bonding fibers, wherein the plastic-containing bonding fibers are between about 10 to 50 wt. % of the laminate flooring sub-layer material.
2. (Original) The laminate flooring sub-layer material of claim 1, wherein the laminate flooring sub-layer material has a substantially uniform density throughout its volume.
3. (Currently amended) The laminate flooring sub-layer material of claim 1, wherein the inorganic fibers are scrap rotary fibers, virgin rotary fibers, scrap textile fibers, virgin textile fibers or a combination thereof.
4. (Original) The laminate flooring sub-layer material of claim 3, wherein the rotary fibers have an average diameter not greater than about 6 micrometers.
5. (Original) The laminate flooring sub-layer material of claim 3, wherein the rotary fibers have an average diameter of about 2 to 5 micrometers.
6. (Original) The laminate flooring sub-layer material of claim 3, wherein the rotary fibers have an average fiber length not greater than about 3 cm.
7. (Original) The laminate flooring sub-layer material of claim 3, wherein the rotary fibers have an average fiber length between about 0.2 to 1 cm.
- 8.-11. (Canceled)

PATENT

Attorney Docket No. D0932-405

12. (Original) The laminate flooring sub-layer material of claim 1, wherein the plastic-containing bonding fibers comprise bi-component fibers.
13. (Original) The laminate flooring sub-layer material of claim 12, wherein the bi-component fibers are sheath-core, side-by-side, island-in-the-sea, or segmented-pie cross-section type.
14. (Original) The laminate flooring sub-layer material of claim 12, wherein the bi-component fibers comprise:
 - a core material; and
 - a sheath material, wherein the sheath material has a melting point temperature lower than the melting point temperature of the core material.
15. (Original) The laminate flooring sub-layer material of claim 14, wherein the core material and the sheath material are both thermoplastic polymers.
16. (Original) The laminate flooring sub-layer material of claim 14, wherein the core material is a mineral and the sheath material is a thermoplastic polymer.
17. (Original) The laminate flooring sub-layer material of claim 14, wherein the core material and the sheath material are same thermoplastic polymer but of different formulations.
18. (Original) The laminate flooring sub-layer material of claim 1, wherein the plastic-containing bonding fibers comprise mono-component thermoplastic polymer fibers.
19. (Canceled)
20. (Original) The laminate flooring sub-layer material of claim 1, wherein said plastic-containing bonding fibers are between about 10 to 25 wt. % of the laminate flooring sub-layer material.

PATENT

Attorney Docket No. D0932-405

21. (Original) The laminate flooring sub-layer material of claim 1, wherein said laminate flooring sub-layer material has a gram weight of about 150 to 600 gm/m².
22. (Original) The laminate flooring sub-layer material of claim 1, wherein said laminate flooring sub-layer material has a density of about 48 to 200 kg/m³.
23. (Original) The laminate flooring sub-layer material of claim 1, wherein said laminate flooring sub-layer material has a density of about 80 to 112 kg/m³.
24. (Original) The laminate flooring sub-layer material of claim 1, wherein said laminate flooring sub-layer material after curing or heating has a thickness of about 2 to 8 mm.
25. (Currently amended) A laminated sub-layer mat comprising:
a fiber composite mat having a first side and a second side, the fiber composite mat comprising:
inorganic fibers;
plastic-containing bonding fibers, said inorganic fibers and said plastic-containing bonding fibers being uniformly blended and bonded together by a portion of the plastic of said plastic-containing bonding fibers; and
a vapor barrier layer bonded to at least one of the two sides of the fiber composite mat, wherein the plastic-containing bonding fibers are between about 10 to 50 wt. % of the fiber composite mat.
26. (Original) The laminated sub-layer mat of claim 25, wherein the vapor barrier layer is polyethylene film, kraft paper, kraft paper coated with asphalt, foil, foil-backed paper, foil-backed paper coated with asphalt, or flame-resistant foil-scrim-kraft paper.
27. (Original) The laminated sub-layer mat of claim 25, wherein at least one edge of the vapor barrier layer extends beyond the corresponding edge of the fiber composite mat.

PATENT

Attorney Docket No. D0932-405

28. (Original) The laminated sub-layer mat of claim 25, wherein said inorganic fibers are scrap rotary fibers, virgin rotary fibers, scrap textile fibers, virgin textile fibers or a combination thereof.
29. (Original) The laminated sub-layer mat of claim 28, wherein the rotary fibers have average diameter not greater than about 6 micrometers.
30. (Original) The laminated sub-layer mat of claim 28, wherein the rotary fibers have average diameter of about 2 to 5 micrometers.
31. (Original) The laminated sub-layer mat of claim 28, wherein the rotary fibers have average fiber length not greater than about 3 cm.
32. (Original) The laminated sub-layer mat of claim 28, wherein the rotary fibers have average fiber length between about 0.2 to 1 cm.
- 33.-36. (Canceled)
37. (Original) The laminated sub-layer mat of claim 25, wherein said plastic-containing bonding fibers comprise bi-component fibers.
38. (Original) The laminated sub-layer mat of claim 37, wherein said bi-component fibers are sheath-core, side-by-side, island-in-the-sea, or segmented-pie cross-section type.
39. (Original) The laminated sub-layer mat of claim 37, wherein said bi-component fibers comprise:
a core material; and
a sheath material, wherein said sheath material has a melting point temperature lower than the melting point temperature of the core material.
40. (Original) The laminated sub-layer mat of claim 39, wherein said core material and said sheath material are both thermoplastic polymers.

PATENT

Attorney Docket No. D0932-405

41. (Original) The laminated sub-layer mat of claim 39, wherein said core material is a mineral and said sheath material is a thermoplastic polymer.
42. (Original) The laminated sub-layer mat of claim 39, wherein said core material and said sheath material are same thermoplastic polymer but of different formulations.
43. (Original) The laminated sub-layer mat of claim 25, wherein said plastic-containing bonding fibers comprise mono-component thermoplastic polymer fibers.
44. (Canceled)
45. (Original) The laminated sub-layer mat of claim 25, wherein said plastic-containing bonding fibers are between about 10 to 25 wt. % of the fiber composite mat.
46. (Original) The laminate sub-layer mat of claim 25, wherein said laminate sub-layer mat has a gram weight of about 150 to 600 gm/m².
47. (Original) The laminate sub-layer mat of claim 25, wherein said laminate sub-layer mat has a density of about 48 to 200 kg/m³.
48. (Original) The laminate sub-layer mat of claim 25, wherein said laminate sub-layer mat has a density of about 80 to 112 kg/m³.
49. (Original) The laminate sub-layer mat of claim 25, wherein said laminate sub-layer mat after curing or heating has a thickness of about 2 to 8 mm.
50. (Original) A floor structure comprising:
a supporting structural substrate;

PATENT

Attorney Docket No. D0932-405

a laminated sub-layer mat, wherein said laminated sub-layer mat comprises a fiber composite mat having a first side and a second side and a vapor barrier layer bonded to at least one of the two sides of the fiber composite mat; and

a finished floor layer in contact with the laminated sub-layer mat.

51. (Original) The floor structure of claim 50, wherein said fiber composite mat comprises:
inorganic fibers; and

plastic-containing bonding fibers, said inorganic fibers and said plastic-containing bonding fibers being uniformly blended and bonded together by a portion of the plastic of said plastic-containing bonding fibers.

52.-58. (Canceled)